5 - Rappu

#11

CRF Errors Corrected by the STIC Systems Branch

Serial Number: 09/778,516A ENTERED

CRF Processing Date: 5/9/2002
Edited by:
Verified by: _____ (STIC staff)

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically:

  _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____.
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:

  _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

  _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

  _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included:

  _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically:

  _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____.
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically:

  _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically:

  _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted ***ending*** stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☑ Other: inserted hard return after Seq. 2

***Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.**

3/1/95

1600

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: **US/09/778,516A** TIME: 12:36:48

Input Set : **A:\pto.amc.txt**
Output Set: **N:\CRF3\05092002\I778516A.raw**

<110> APPLICANT: Lo, Wei-Yu
Lo, Ming Ching
Liau, Pei-Ru
<120> TITLE OF INVENTION: LAC SHUTTLE VECTORS
<130> FILE REFERENCE: 12875-002001
<140> CURRENT APPLICATION NUMBER: 09/778,516A
<141> CURRENT FILING DATE: 2001-02-07
<150> PRIOR APPLICATION NUMBER: TW 89110235
<151> PRIOR FILING DATE: 2000-05-26
<160> NUMBER OF SEQ ID NOS: 6
<170> SOFTWARE: FastSEQ for Windows Version 4.0
<210> SEQ ID NO: 1
<211> LENGTH: 8115
<212> TYPE: DNA
<213> ORGANISM: Lactobacillus plantarum
<400> SEQUENCE: 1

gatgtacggg ccagatatac gcgttgacat tgattattga ctagttatta atagtaatca 60
attacggggt cattagttca tagcccatat atggagttcc gcgttacata acttacggta 120
aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat aatgacgtat 180
gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga ctatttacgg 240
taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc ccctattgac 300
gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt atgggacttt 360
cctacttggc agtacatcta cgtattagtc atcgctatta ccatggtgat gcggttttgg 420
cagtacatca atgggcgtgg atagcggttt gactcacggg gatttccaag tctccacccc 480
attgacgtca atgggagttt gttttggcac caaaatcaac gggactttcc aaaatgtcgt 540
aacaactccg ccccattgac gcaaatgggc ggtaggcgtg tacggtggga ggtctatata 600
agcagagctc tctggctaac tagagaaccc actgcttact ggcttatcga aattaatacg 660
actcactata gggagaccca agcttggtac cgagctcgga tccactagta acggccgcca 720
gtgtgctgga attctgcaga tatccatcac actggcggcc gctcgagcat gcatctagag 780
ggccctattc tatagtgtca cctaaatgct agagctcgct gatcagcctc gactgtgcct 840
tctagttgcc agccatctgt tgtttgcccc tcccccgtgc cttccttgac cctggaaggt 900
gccactccca ctgtcctttc ctaataaaat gaggaaattg catcgcattg tctgagtagg 960
tgtcattcta ttctgggggg tggggtgggg caggacagca agggggagga ttgggaagac 1020
aatagcaggc atgctgggga tgcggtgggc tctatggctt ctgaggcgga aagaaccagc 1080
tgcattaatg aatcggccaa cgcgcgggga gaggcggttt gcgtattggg cgctcttccg 1140
cttcctcgct cactgactcg ctgcgctcgg tcgttcggct gcggcgagcg gtatcagctc 1200
actcaaaggc ggtaatacgg ttatccacag aatcagggga taacgcagga aagaacatgt 1260
gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaggc cgcgttgctg gcgtttttcc 1320
ataggctccg ccccccctgac gagcatcaca aaaatcgacg ctcaagtcag aggtggcgaa 1380
acccgacagg actataaaga taccaggcgt ttcccccctgg aagctccctc gtgcgctctc 1440
ctgttccgac cctgccgctt accggatacc tgtccgcctt tctcccttcg ggaagcgtgg 1500
cgctttctca atgctcacgc tgtaggtatc tcagttcggt gtaggtcgtt cgctccaagc 1560
tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg cgccttatcc ggtaactatc 1620

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 12:36:48

Input Set : A:\pto.amc.txt
Output Set: N:\CRF3\05092002\I778516A.raw

56 gtcttgagtc caacccggta agacacgact tatcgccact ggcagcagcc actggtaaca 1680
57 ggattagcag agcgaggtat gtaggcggtg ctacagagtt cttgaagtgg tggcctaact 1740
58 acggctacac tagaaggaca gtatttggta tctgcgctct gctgaagcca gttaccttcg 1800
59 gaaaaagagt tggtagctct tgatccggca aacaaaccac cgctggtagc ggtggttttt 1860
60 ttgtttgcaa gcagcagatt acgcgcagaa aaaaaggatc tcaagaagat cctttgatct 1920
61 tttctacggg gtctgacgct cagtggaacg aaaactcacg ttaagggatt ttggtcatga 1980
62 gcggatacat atttgaatgt atttagaaaa ataaacaaat aggggttccg cgcacatttc 2040
63 cccgaaaagt gccacctgac gtcgacggat cgggagatca acggtaaatc cgttggcata 2100
64 tccctttttt gttgtcagct tgctgacttc tgatacaggt tttagcatta ctccaattta 2160
65 tttggagtgt aagtgcacat tatcatgtag tgcgcattat catgtagtgc gcattatcat 2220
66 gtagtgcgca ttatcatgta gtgcgcatta tcatgtagtg cgcattatca tgtagtgcgc 2280
67 attatcatgt agtgcgcaca ttatcatgta cattatcatg tagtgcgcat tatcatgtag 2340
68 tgcgcacatt atcatgtagt gcgcattatc atgtagtgcg cattatcatg tagtgcgcac 2400
69 ttacacacaa catgaagttg tgttgtgcta aacccatcaa aacctgcatc agatttcgcg 2460
70 ttgctcaaac gtaactgact tgcgtcagtt tggaacattc aaaaataaat aagttcagtc 2520
71 gctagctcct tcgaactttt ttatttttga acgttaattt taaaggctct tatttgcgtt 2580
72 ctaagcgatt ttagctaaca gttagctatc taactgtctg tcaacggtaa atcgacttag 2640
73 aggggcttat tgagccttac aggcgatatt agcccctctt ggaggcttta aggagttgat 2700
74 agactagaca ataccaaaag cctgacgtct tggaaaacaa gcccttgttt tcccgagccc 2760
75 agcggcggca agcgttacgg tccagctggt tcagctggtc agtgtggctg aaagccacgg 2820
76 tttaaaaaaa gcagttcagc ggtttttgct gatctgcttt ttggggttta aaaacgcaat 2880
77 ttttggcgtt ttcttcttat cttgatacta ttagcaacaa ctagtttttt aaaatcaagc 2940
78 ttgattaggc ttaattgggc ttgtatccat tgattttata ggcttttggt gtattattag 3000
79 ggttataaat tggttgaaag aaagacaaaa taaaaaccca cgtgcaaatt cctagtttgg 3060
80 ccgctcggaa cacgtgagtt gattatcatt tgcgatttat agcctattct aggggaaaag 3120
81 ccctatgatg tcaaggttat aagcttattg aaaaagatag tcagctcctt cacgtggata 3180
82 aactggagga gctttttatg tcagaaattt ttgaagataa aactgaaaat ggcaaagtta 3240
83 gaccttggcg agaacggaag attgaaaatg tgcgctatgc cgaatatttg gcaatcttag 3300
84 aatttaaacg ggcacatgat gtacggggtt gtggtgaagt tttgcgtttt cgtaagattg 3360
85 gcgagcactt aaaactttat caaacgtggt tttgtcataa acgattgtgt ccattgtgta 3420
86 attggagaag gagcatgaaa aactcgagcc agttaaaaca aattattgcg gaagcagttg 3480
87 caagagagcc taaaggacgg tttttgtttt taactttaac cgttaaaaac gctcattcag 3540
88 cagaggagtt aaaagtgtct ttaagagctt tgactaaagc ctttaataag ctaactcgct 3600
89 ataaaaaagt gactaaaaat ttattgggtt atttacgttc aacggaaatt accgttaatg 3660
90 aacaagacgg gtcatataat caacacttgc atgtgttgct gtttgtaaaa tcaagttatt 3720
91 ttaagaattc aaataattat ttagcacaag cagaatgggc aaaattatgg caaaaagcct 3780
92 tgaaagttga ttatgagcct gtggtgcatg tgcaggctgt taaagctaac aaacgtaaag 3840
93 gaactgactc tttgcaagct agtgccgaag aaacggcgaa atacgaggta aaatcagctg 3900
94 attatatgac ggctgatgat gagcgtaatt tggtggtgat taaaaatttg gagtatgcct 3960
95 tagctggaac acgacaaatc agctatggtg gattattaaa gcaaattaag caagatttga 4020
96 aacttgaaga tgttgagaat ggtgatttag ttcatgttgg cgatgaagat tacaccaaag 4080
97 agcaaatgga agctgcggaa gaagttgtcg caaaatggga ttttaataaa caaaattatt 4140
98 ttatttggta aagagaatgt caggatatga tctcccgatc ccctatggtc gactctcagt 4200
99 acaatctgct ctgatgccgc atagttaagc cagtatctgc tccctgcttg tgtgttggag 4260
100 gtcgctgagt agtgcgcgag caaaatttaa gctacaacaa ggcaaggctt gaccgacaat 4320
101 tgcatgaaga atctgcttag ggttaggcgt tttgcgctgc ttcgttagaa gcaaactaag 4380
102 agtgtgttga gtagtgcagt atcttaaaat tttgtataat aggaattgaa gttaaattag 4440
103 atgctaaaaa tttgtaatta agaaggagtg attacatgat tggcagccag tctccgggca 4500
104 attaatgaac ttggacatgg ttgacgaccc ggtctttgca agccgaattc gaccacactg 4560

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 12:36:48

Input Set : A:\pto.amc.txt
Output Set: N:\CRF3\05092002\I778516A.raw

105 gcggccgtta ctagggtatc gatccgataa aaagttaggc gacggctttg ccctggtgcc 4620
106 agcagacggt aaggtctacg cgccatttgc cggtactgtc cgccagctgg ccaagacccg 4680
107 gcactcgatc gtcctggaaa atgaacatgg ggtcttggtc ttgattcacc ttggcctggg 4740
108 cacggtcaaa ttaaacggga ctggctttgt cagctatgtt gaagagggca gccaggtaga 4800
109 agccggccag cagatcctgg aattctggga cccggcgatc aagcaggcca agctggacga 4860
110 cacggtaatc gtgaccgtca tcaacagcga aactttcaca aatagccaga tgctcttgcc 4920
111 gatcggccac agcgtccaag ccctggatga tgtattcaag ttagaaggga agaattagaa 4980
112 aatgagcaat aagttagtaa aagaaaaaag agttgaccag gcagacctgg cctggctgac 5040
113 tgacccggaa gtttacgaag tcaatacaat tcccccgcac tccgaccatg agtccttcca 5100
114 aagccaggaa gaactggagg agggcaagtc cagtttagtg cagtccctgg acggggactg 5160
115 gctgattgac tacgctgaaa acggccaggg accagtcaac ttctatgcag aagactttga 5220
116 cgatagcaat tttaagtcag tcaaagtacc cggcaacctg gaactgcaag gctttggcca 5280
117 gccccagtat gtcaacgtcc aatatccatg ggacggcagt gaggagattt tcccgcccca 5340
118 aattccaagc aaaaatccgc tcgcttctta tgtcagatac tttgacctgg atgaagcttt 5400
119 ctgggacaag gaagtcagct tgaagtttga cggggcggca acagccatct atgtctggct 5460
120 gaacggccac ttcgtcggct acggggaaga ctcctttacc ccaagcgagt ttatggttac 5520
121 caagttcctc aagaaagaaa ataaccgcct ggcagtggct ctctacaagt attcttccgc 5580
122 ctcctggctg gaagaccagg acttctggcg catgtctggt ttgttcagat cagtgactct 5640
123 tcaggccaag ccgcgtctgc acttggagga ccttaagctt acggccagct tgaccgataa 5700
124 ctaccaaaaa ggaaagctgg aagtcgaagc caatattgcc taccgcttgc caaatgccag 5760
125 ctttaagctg gaagtgcggg atagtgaagg tgacttggtt gctgaaaagc tgggcccaat 5820
126 cagaagcgag cagctggaat tcactctggc tgatttgcca gtagctgcct ggagcgcgga 5880
127 aaagcctaac ctttaccagg tccgcctgta tttataccag gcaggcagcc tcttagaggt 5940
128 tagccggcag gaagtgggtt tccgcaactt tgaactaaaa gacgggatta tgtaccttaa 6000
129 cggccagcgg atcgtcttca agggggccaa ccggcacgaa tttgacagta agttgggtcg 6060
130 ggctatcacg gaagaggata tgatctggga catcaagacc atgaagcgaa gcaacatcaa 6120
131 tgctgtccgc tgctctcact acccgaacca gtcctcttt taccggctct gtgacaagta 6180
132 cggcctttac gtcattgatg aagctaacct ggaaagccac ggcacctggg aaaaagtggg 6240
133 ggggcacgaa gatcctagct tcaatgttcc aggcgatgac cagcattggc tgggagccag 6300
134 cttatcccgg gtgaagaaca tgatggctcg ggacaagaac catgcttcaa tcctaatctg 6360
135 gtctttaggc aatgagtctt acgccggcac tgtctttgcc caaatggctg attacgtccg 6420
136 gaaggctgat ccgacccggg ttcagcacta tgaaggggtg acccacaacc ggaagtttga 6480
137 cgacgccacc cagattgaaa gccggatgta tgctccggcc aaggtaattg aagaatactt 6540
138 gaccaataaa ccagccaagc catttatctc agttgaatac gctcacgcca tgggcaactc 6600
139 cgtcggtgac ctggccgcct acacggccct ggaaaaatac ccccactacc agggcggctt 6660
140 catctgggac tggattgacc aaggactgga aaaagacggg cacctgcttt atgggggcga 6720
141 cttcgatgac cggccaaccg actatgaatt ctgcgggaac ggcctggtct ttgctgaccg 6780
142 gactgaatcg ccgaaactgg ctaatgtcaa ggccctttac gccaacctta agttagaagt 6840
143 aaaagatggg cagctcttcc tcaaaaacga caatttattt accaacagct catcttacta 6900
144 cttcttgact agtcttttgg tcgatggcaa gttgacctac cagagccggc ctctgacctt 6960
145 tggcctggag cctggcgaat ccgggacctt tgccctgcct tggccggaag tcgctgatga 7020
146 aaaaggggag gtcgtctacc gggtaacggc ccacttaaaa gaagacttgc cttgggcgga 7080
147 tgagggcttc actgtggctg aagcagaaga agtagctcaa aagctgccgg aatttaagcc 7140
148 ggaagggcgg ccagatttag ttgattccga ctacaaccta ggcctgaaag gaaataactt 7200
149 ccaaattctc ttctccaagg tcaagggctg gccggtttcc ctcaagtatg ccggtaggga 7260
150 atacttgaag cggctgccgg aatttacctt ctggcgggcc ctgacggaca acgaccgggg 7320
151 agctggttac ggctatgatc tggcccggtg ggaaaatgcc ggcaagtatg cccgcttgaa 7380
152 agacatcagc tgcgaggtca aggaagactc cgttttggtc aagactgcct ttacgttgcc 7440
153 tgtcgcctta aagggtgatt taaccgtgac ctatgaagtc gatggacggg gcaagattgc 7500

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 12:36:48

Input Set : A:\pto.amc.txt
Output Set: N:\CRF3\05092002\I778516A.raw

```
154 tgtaacagct gacttcccag gcgcggaaga agctggtctc ttgccagcct ttggcttgaa    7560
155 cctggccctg ccaaaagaac tgaccgatta ccgctactat ggtctgggac ctaatgagag    7620
156 ctacccagac cgcttggaag gtaattacct gggcatctac cagggagcgg taaaaaagaa    7680
157 ctttagccca tatcgtccgc aggaaacggg caaccggagc aaggttcgct ggtaccagct    7740
158 ctttgatgaa aagggcggct tggaatttac ggccaatggg gcagacttga acttgtctgc    7800
159 tttgccatat tctgccgccc aaattgaagc agcggaccac gcttttgaac tgactaacaa    7860
160 ttacacttgg gttagagcct taagcgccca gatggggtc ggcggggatg actcctgggg    7920
161 gcagaaggtc cacccggaat tctgcctgga tgctcaaaaa gcccgccagc ttcgcctggt    7980
162 gattcagccc cttttactaa aataaatgct acaattgact taacaggatg aaattttagt    8040
163 aaaagcaaag cgagtgagga agatggcaac gatcagagaa gtgccaaggc agccggcgtg    8100
164 tcgctagcga cggtc                                                    8115
166 <210> SEQ ID NO: 2
167 <211> LENGTH: 8115
168 <212> TYPE: DNA
169 <213> ORGANISM: Lactobacillus plantarum
171 <400> SEQUENCE: 2
172 gatgtacggg ccagatatac gcgttgacat tgattattga ctagttatta atagtaatca      60
173 attacggggt cattagttca tagcccatat atggagttcc gcgttacata acttacggta     120
174 aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat aatgacgtat     180
175 gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga ctatttacgg     240
176 taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc ccctattgac     300
177 gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt atgggacttt     360
178 cctacttggc agtacatcta cgtattagtc atcgctatta ccatggtgat gcggttttgg     420
179 cagtacatca atgggcgtgg atagcggttt gactcacggg gatttccaag tctccacccc     480
180 attgacgtca atgggagttt gttttggcac caaaatcaac gggactttcc aaaatgtcgt     540
181 aacaactccg ccccattgac gcaaatgggc ggtaggcgtg tacggtggga ggtctatata     600
182 agcagagctc tctggctaac tagagaaccc actgcttact ggcttatcga aattaatacg     660
183 actcactata gggagaccca agcttggtac cgagctcgga tccactagta acggccgcca     720
184 gtgtgctgga attctgcaga tatccatcac actggcggcc gctcgagcat gcatctagag     780
185 ggccctattc tatagtgtca cctaaatgct agagctcgct gatcagcctc gactgtgcct     840
186 tctagttgcc agccatctgt tgtttgcccc tcccccgtgc cttccttgac cctggaaggt     900
187 gccactccca ctgtcctttc ctaataaaat gaggaaattg catcgcattg tctgagtagg     960
188 tgtcattcta ttctgggggg tggggtgggg caggacagca agggggagga ttgggaagac    1020
189 aatagcaggc atgctgggga tgcggtgggc tctatggctt ctgaggcgga aagaaccagc    1080
190 tgcattaatg aatcggccaa cgcgcgggga gaggcggttt gcgtattggg cgctcttccg    1140
191 cttcctcgct cactgactcg ctgcgctcgg tcgttcggct gcggcgagcg gtatcagctc    1200
192 actcaaaggc ggtaatacgg ttatccacag aatcagggga taacgcagga aagaacatgt    1260
193 gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaggc cgcgttgctg gcgtttttcc    1320
194 ataggctccg ccccccctgac gagcatcaca aaaatcgacg ctcaagtcag aggtggcgaa    1380
195 acccgacagg actataaaga taccaggcgt ttcccccctgg aagctccctc gtgcgctctc    1440
196 ctgttccgac cctgccgctt accggatacc tgtccgcctt tctcccttcg ggaagcgtgg    1500
197 cgctttctca atgctcacgc tgtaggtatc tcagttcggt gtaggtcgtt cgctccaagc    1560
198 tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg cgccttatcc ggtaactatc    1620
199 gtcttgagtc caacccggta agacacgact tatcgccact ggcagcagcc actggtaaca    1680
200 ggattagcag agcgaggtat gtaggcggtg ctacagagtt cttgaagtgg tggcctaact    1740
201 acggctacac tagaaggaca gtatttggta tctgcgctct gctgaagcca gttaccttcg    1800
202 gaaaaagagt tggtagctct tgatccggca aacaaaccac cgctggtagc ggtggttttt    1860
203 ttgtttgcaa gcagcagatt acgcgcagaa aaaaaggatc tcaagaagat cctttgatct    1920
204 tttctacggg gtctgacgct cagtggaacg aaaactcacg ttaagggatt ttggtcatga    1980
```

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 12:36:48

Input Set : A:\pto.amc.txt
Output Set: N:\CRF3\05092002\I778516A.raw

205 gcggatacat atttgaatgt atttagaaaa ataaacaaat aggggttccg cgcacatttc 2040
206 cccgaaaagt gccacctgac gtcgacggat cgggagatca tatcctgaca ttctctttac 2100
207 caaataaaat aattttgttt attaaaatcc cattttgcga caacttcttc cgcagcttcc 2160
208 atttgctctt tggtgtaatc ttcatcgcca acatgaacta aatcaccatt ctcaacatct 2220
209 tcaagtttca aatcttgctt aatttgcttt aataatccac catagctgat ttgtcgtgtt 2280
210 ccagctaagg catactccaa atttttaatc accaccaaat tacgctcatc atcagccgtc 2340
211 atataatcag ctgattttac ctcgtatttc gccgtttctt cggcactagc ttgcaaagag 2400
212 tcagttcctt tacgtttgtt agctttaaca gcctgcacat gcaccacagg ctcataatca 2460
213 actttcaagg ctttttgcca taattttgcc cattctgctt gtgctaaata attatttgaa 2520
214 ttcttaaaat aacttgattt tacaaacagc aacacatgca agtgttgatt atatgacccg 2580
215 tcttgttcat taacggtaat ttccgttgaa cgtaaataac ccaataaatt tttagtcact 2640
216 tttttatagc gagttagctt attaaaggct ttagtcaaag ctcttaaaga cacttttaac 2700
217 tcctctgctg aatgagcgtt tttaacggtt aaagttaaaa acaaaaaccg tcctttaggc 2760
218 tctcttgcaa ctgcttccgc aataatttgt tttaactggc tcgagttttt catgctcctt 2820
219 ctccaattac acaatggaca caatcgttta tgacaaaacc acgtttgata aagttttaag 2880
220 tgctcgccaa tcttacgaaa acgcaaaact tcaccacaac cccgtacatc atgtgcccgt 2940
221 ttaaattcta agattgccaa atattcggca tagcgcacat tttcaatctt ccgttctcgc 3000
222 caaggtctaa ctttgccatt ttcagtttta tcttcaaaaa tttctgacat aaaaagctcc 3060
223 tccagtttat ccacgtgaag gagctgacta tctttttcaa taagcttata accttgacat 3120
224 catagggctt ttcccctaga ataggctata aatcgcaaat gataatcaac tcacgtgttc 3180
225 cgagcggcca aactaggaat ttgcacgtgg gtttttattt tgtctttctt tcaaccaatt 3240
226 tataacccta ataatacacc aaaagcctat aaaatcaatg gatacaagcc caattaagcc 3300
227 taatcaagct tgattttaaa aaactagttg ttgctaatag tatcaagata agaagaaaac 3360
228 gccaaaaatt gcgtttttaa accccaaaaa gcagatcagc aaaaaccgct gaactgcttt 3420
229 ttttaaaccg tggctttcag ccacactgac cagctgaacc agctggaccg taacgcttgc 3480
230 cgccgctggg ctcgggaaaa caagggcttg ttttccaaga cgtcaggctt ttggtattgt 3540
231 ctagtctatc aactccttaa agcctccaag aggggctaat atcgcctgta aggctcaata 3600
232 agcccctcta agtcgattta ccgttgacag acagttagat agctaactgt tagctaaaat 3660
233 cgcttagaac gcaaataaga gcctttaaaa ttaacgttca aaaataaaaa agttcgaagg 3720
234 agctagcgac tgaacttatt tatttttgaa tgttccaaac tgacgcaagt cagttacgtt 3780
235 tgagcaacgc gaaatctgat gcaggttttg atgggtttag cacaacacaa cttcatgttg 3840
236 tgtgtaagtg cgcactacat gataatgcgc actacatgat aatgcgcact acatgataat 3900
237 gtgcgcacta catgataatg cgcactacat gataatgtac atgataatgt gcgcactaca 3960
238 tgataatgcg cactacatga taatgcgcac tacatgataa tgcgcactac atgataatgc 4020
239 gcactacatg ataatgcgca ctacatgata atgcgcacta catgataatg tgcacttaca 4080
240 ctccaaataa attggagtaa tgctaaaacc tgtatcagaa gtcagcaagc tgacaacaaa 4140
241 aaagggatat gccaacggat ttaccgttga tctcccgatc ccctatggtc gactctcagt 4200
242 acaatctgct ctgatgccgc atagttaagc cagtatctgc tccctgcttg tgtgttggag 4260
243 gtcgctgagt agtgcgcgag caaaatttaa gctacaacaa ggcaaggctt gaccgacaat 4320
244 tgcatgaaga atctgcttag ggttaggcgt tttgcgctgc ttcgttagaa gcaaactaag 4380
245 agtgtgttga gtagtgcagt atcttaaaat tttgtataat aggaattgaa gttaaattag 4440
246 atgctaaaaa tttgtaatta agaaggagtg attacatgat tggcagccag tctccgggca 4500
247 attaatgaac ttggacatgg ttgacgaccc ggtctttgca agccgaattc gaccacactg 4560
248 gcggccgtta ctagggtatc gatccgataa aaagttaggc gacggctttg ccctggtgcc 4620
249 agcagacggt aaggtctacg cgccatttgc cggtactgtc cgccagctgg ccaagacccg 4680
250 gcactcgatc gtcctggaaa atgaacatgg ggtcttggtc ttgattcacc ttggcctggg 4740
251 cacggtcaaa ttaaacggga ctggctttgt cagctatgtt gaagagggca gccaggtaga 4800
252 agccggccag cagatcctgg aattctggga cccggcgatc aagcaggcca agctggacga 4860
253 cacggtaatc gtgaccgtca tcaacagcga aactttcaca aatagccaga tgctcttgcc 4920

VERIFICATION SUMMARY DATE: 05/09/2002
PATENT APPLICATION: **US/09/778,516A** TIME: 12:36:49

Input Set : **A:\pto.amc.txt**
Output Set: **N:\CRF3\05092002\I778516A.raw**

1636

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 11:48:42

Input Set : A:\12875-002001.txt
Output Set: N:\CRF3\05092002\I778516A.raw

Does Not Comply
Corrected Diskette Needed

```
 4 <110> APPLICANT: Lo, Wei-Yu
 5       Lo, Ming Ching
 6       Liau, Pei-Ru
 8 <120> TITLE OF INVENTION: LAC SHUTTLE VECTORS
11 <130> FILE REFERENCE: 12875-002001
13 <140> CURRENT APPLICATION NUMBER: 09/778,516A
14 <141> CURRENT FILING DATE: 2001-02-07
16 <150> PRIOR APPLICATION NUMBER: TW 89110235
17 <151> PRIOR FILING DATE: 2000-05-26
19 <160> NUMBER OF SEQ ID NOS: 6
21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
```

P.4

ERRORED SEQUENCES

```
165 <210> SEQ ID NO: 2
166 <211> LENGTH: 8115
167 <212> TYPE: DNA
168 <213> ORGANISM: Lactobacillus plantarum
170 <400> SEQUENCE: 2
171 gatgtacggg ccagatatac gcgttgacat tgattattga ctagttatta atagtaatca      60
172 attacggggt cattagttca tagcccatat atggagttcc gcgttacata acttacggta     120
173 aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat aatgacgtat     180
174 gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga ctatttacgg     240
175 taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc ccctattgac     300
176 gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt atgggacttt     360
177 cctacttggc agtacatcta cgtattagtc atcgctatta ccatggtgat gcggttttgg     420
178 cagtacatca atgggcgtgg atagcggttt gactcacggg gatttccaag tctccacccc     480
179 attgacgtca atgggagttt gttttggcac caaaatcaac gggactttcc aaaatgtcgt     540
180 aacaactccg ccccattgac gcaaatgggc ggtaggcgtg tacggtggga ggtctatata     600
181 agcagagctc tctggctaac tagagaaccc actgcttact ggcttatcga aattaatacg     660
182 actcactata gggagaccca agcttggtac cgagctcgga tccactagta acggccgcca     720
183 gtgtgctgga attctgcaga tatccatcac actggcggcc gctcgagcat gcatctagag     780
184 ggccctattc tatagtgtca cctaaatgct agagctcgct gatcagcctc gactgtgcct     840
185 tctagttgcc agccatctgt tgtttgcccc tcccccgtgc cttccttgac cctggaaggt     900
186 gccactccca ctgtcctttc ctaataaaat gaggaaattg catcgcattg tctgagtagg     960
187 tgtcattcta ttctgggggg tggggtgggg caggacagca agggggagga ttgggaagac    1020
188 aatagcaggc atgctgggga tgcggtgggc tctatggctt ctgaggcgga aagaaccagc    1080
189 tgcattaatg aatcggccaa cgcgcgggga gaggcggttt gcgtattggg cgctcttccg    1140
190 cttcctcgct cactgactcg ctgcgctcgg tcgttcggct gcggcgagcg gtatcagctc    1200
191 actcaaaggc ggtaatacgg ttatccacag aatcagggga taacgcagga aagaacatgt    1260
192 gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaggc cgcgttgctg gcgttttcc     1320
193 ataggctccg ccccccctgac gagcatcaca aaaatcgacg ctcaagtcag aggtggcgaa    1380
```

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 11:48:42

Input Set : A:\12875-002001.txt
Output Set: N:\CRF3\05092002\I778516A.raw

194 acccgacagg actataaaga taccaggcgt ttccccctgg aagctccctc gtgcgctctc 1440
195 ctgttccgac cctgccgctt accggatacc tgtccgcctt tctcccttcg ggaagcgtgg 1500
196 cgctttctca atgctcacgc tgtaggtatc tcagttcggt gtaggtcgtt cgctccaagc 1560
197 tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg cgccttatcc ggtaactatc 1620
198 gtcttgagtc caacccggta agacacgact tatcgccact ggcagcagcc actggtaaca 1680
199 ggattagcag agcgaggtat gtaggcggtg ctacagagtt cttgaagtgg tggcctaact 1740
200 acggctacac tagaaggaca gtatttggta tctgcgctct gctgaagcca gttaccttcg 1800
201 gaaaaagagt tggtagctct tgatccggca aacaaaccac cgctggtagc ggtggttttt 1860
202 ttgtttgcaa gcagcagatt acgcgcagaa aaaaaggatc tcaagaagat cctttgatct 1920
203 tttctacggg gtctgacgct cagtggaacg aaaactcacg ttaagggatt ttggtcatga 1980
204 gcggatacat atttgaatgt atttagaaaa ataaacaaat aggggttccg cgcacatttc 2040
205 cccgaaaagt gccacctgac gtcgacggat cgggagatca tatcctgaca ttctctttac 2100
206 caaataaaat aattttgttt attaaaatcc cattttgcga caacttcttc cgcagcttcc 2160
207 atttgctctt tggtgtaatc ttcatcgcca acatgaacta aatcaccatt ctcaacatct 2220
208 tcaagtttca aatcttgctt aatttgcttt aataatccac catagctgat ttgtcgtgtt 2280
209 ccagctaagg catactccaa atttttaatc accaccaaat tacgctcatc atcagccgtc 2340
210 atataatcag ctgattttac ctcgtatttc gccgtttctt cggcactagc ttgcaaagag 2400
211 tcagttcctt tacgtttgtt agctttaaca gcctgcacat gcaccacagg ctcataatca 2460
212 actttcaagg ctttttgcca taattttgcc cattctgctt gtgctaaata attatttgaa 2520
213 ttcttaaaat aacttgattt tacaaacagc aacacatgca agtgttgatt atatgacccg 2580
214 tcttgttcat taacggtaat ttccgttgaa cgtaaataac ccaataaatt tttagtcact 2640
215 tttttatagc gagttagctt attaaaggct ttagtcaaag ctcttaaaga cacttttaac 2700
216 tcctctgctg aatgagcgtt tttaacggtt aaagttaaaa acaaaaaccg tcctttaggc 2760
217 tctcttgcaa ctgcttccgc aataatttgt tttaactggc tcgagttttt catgctcctt 2820
218 ctccaattac acaatggaca caatcgttta tgacaaaacc acgtttgata aagttttaag 2880
219 tgctcgccaa tcttacgaaa acgcaaaact tcaccacaac cccgtacatc atgtgcccgt 2940
220 ttaaattcta agattgccaa atattcggca tagcgcacat tttcaatctt ccgttctcgc 3000
221 caaggtctaa ctttgccatt ttcagtttta tcttcaaaaa tttctgacat aaaaagctcc 3060
222 tccagtttat ccacgtgaag gagctgacta tctttttcaa taagcttata accttgacat 3120
223 catagggctt ttcccctaga ataggctata aatcgcaaat gataatcaac tcacgtgttc 3180
224 cgagcggcca aactaggaat ttgcacgtgg gtttttattt tgtctttctt tcaaccaatt 3240
225 tataacccta ataatacacc aaaagcctat aaaatcaatg gatacaagcc caattaagcc 3300
226 taatcaagct tgattttaaa aaactagttg ttgctaatag tatcaagata agaagaaaac 3360
227 gccaaaaatt gcgtttttaa accccaaaaa gcagatcagc aaaaaccgct gaactgcttt 3420
228 ttttaaaccg tggctttcag ccacactgac cagctgaacc agctggaccg taacgcttgc 3480
229 cgccgctggg ctcgggaaaa caagggcttg ttttccaaga cgtcaggctt ttggtattgt 3540
230 ctagtctatc aactccttaa agcctccaag aggggctaat atcgcctgta aggctcaata 3600
231 agcccctcta agtcgattta ccgttgacag acagttagat agctaactgt tagctaaaat 3660
232 cgcttagaac gcaaataaga gcctttaaaa ttaacgttca aaaataaaaa agttcgaagg 3720
233 agctagcgac tgaacttatt tatttttgaa tgttccaaac tgacgcaagt cagttacgtt 3780
234 tgagcaacgc gaaatctgat gcaggttttg atgggtttag cacaacacaa cttcatgttg 3840
235 tgtgtaagtg cgcactacat gataatgcgc actacatgat aatgcgcact acatgataat 3900
236 gtgcgcacta catgataatg cgcactacat gataatgtac atgataatgt gcgcactaca 3960
237 tgataatgcg cactacatga taatgcgcac tacatgataa tgcgcactac atgataatgc 4020
238 gcactacatg ataatgcgca ctacatgata atgcgcacta catgataatg tgcacttaca 4080
239 ctccaaataa attggagtaa tgctaaaacc tgtatcagaa gtcagcaagc tgacaacaaa 4140
240 aaagggatat gccaacggat ttaccgttga tctcccgatc ccctatggtc gactctcagt 4200
241 acaatctgct ctgatgccgc atagttaagc cagtatctgc tccctgcttg tgtgttggag 4260
242 gtcgctgagt agtgcgcgag caaaatttaa gctacaacaa ggcaaggctt gaccgacaat 4320

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 11:48:42

Input Set : A:\12875-002001.txt
Output Set: N:\CRF3\05092002\I778516A.raw

243 tgcatgaaga atctgcttag ggttaggcgt tttgcgctgc ttcgttagaa gcaaactaag 4380
244 agtgtgttga gtagtgcagt atcttaaaat tttgtataat aggaattgaa gttaaattag 4440
245 atgctaaaaa tttgtaatta agaaggagtg attacatgat tggcagccag tctccgggca 4500
246 attaatgaac ttggacatgg ttgacgaccc ggtctttgca agccgaattc gaccacactg 4560
247 gcggccgtta ctagggtatc gatccgataa aaagttaggc gacggctttg ccctggtgcc 4620
248 agcagacggt aaggtctacg cgccatttgc cggtactgtc cgccagctgg ccaagacccg 4680
249 gcactcgatc gtcctggaaa atgaacatgg ggtcttggtc ttgattcacc ttggcctggg 4740
250 cacggtcaaa ttaaacggga ctggctttgt cagctatgtt gaagagggca gccaggtaga 4800
251 agccggccag cagatcctgg aattctggga cccggcgatc aagcaggcca agctggacga 4860
252 cacggtaatc gtgaccgtca tcaacagcga aactttcaca aatagccaga tgctcttgcc 4920
253 gatcggccac agcgtccaag ccctggatga tgtattcaag ttagaaggga agaattagaa 4980
254 aatgagcaat aagttagtaa aagaaaaaag agttgaccag gcagacctgg cctggctgac 5040
255 tgacccggaa gtttacgaag tcaatacaat tcccccgcac tccgaccatg agtccttcca 5100
256 aagccaggaa gaactggagg agggcaagtc cagtttagtg cagtccctgg acggggactg 5160
257 gctgattgac tacgctgaaa acggccaggg accagtcaac ttctatgcag aagactttga 5220
258 cgatagcaat tttaagtcag tcaaagtacc cggcaacctg gaactgcaag gctttggcca 5280
259 gccccagtat gtcaacgtcc aatatccatg ggacggcagt gaggagattt tcccgcccca 5340
260 aattccaagc aaaaatccgc tcgcttctta tgtcagatac tttgacctgg atgaagcttt 5400
261 ctgggacaag gaagtcagct tgaagtttga cggggcggca acagccatct atgtctggct 5460
262 gaacggccac ttcgtcggct acggggaaga ctcctttacc ccaagcgagt ttatggttac 5520
263 caagttcctc aagaaagaaa ataaccgcct ggcagtggct ctctacaagt attcttccgc 5580
264 ctcctggctg gaagaccagg acttctggcg catgtctggt ttgttcagat cagtgactct 5640
265 tcaggccaag ccgcgtctgc acttggagga ccttaagctt acggccagct tgaccgataa 5700
266 ctaccaaaaa ggaaagctgg aagtcgaagc caatattgcc taccgcttgc caaatgccag 5760
267 ctttaagctg gaagtgcggg atagtgaagg tgacttggtt gctgaaaagc tgggcccaat 5820
268 cagaagcgag cagctggaat tcactctggc tgatttgcca gtagctgcct ggagcgcgga 5880
269 aaagcctaac ctttaccagg tccgcctgta tttataccag gcaggcagcc tcttagaggt 5940
270 tagccggcag gaagtgggtt tccgcaactt tgaactaaaa gacgggatta tgtaccttaa 6000
271 cggccagcgg atcgtcttca agggggccaa ccggcacgaa tttgacagta agttgggtcg 6060
272 ggctatcacg gaagaggata tgatctggga catcaagacc atgaagcgaa gcaacatcaa 6120
273 tgctgtccgc tgctctcact acccgaacca gtccctcttt taccggctct gtgacaagta 6180
274 cggcctttac gtcattgatg aagctaacct ggaaagccac ggcacctggg aaaaagtggg 6240
275 ggggcacgaa gatcctagct tcaatgttcc aggcgatgac cagcattggc tgggagccag 6300
276 cttatcccgg gtgaagaaca tgatggctcg ggacaagaac catgcttcaa tcctaatctg 6360
277 gtctttaggc aatgagtctt acgccggcac tgtctttgcc caaatggctg attacgtccg 6420
278 gaaggctgat ccgacccggg ttcagcacta tgaaggggtg acccacaacc ggaagtttga 6480
279 cgacgccacc cagattgaaa gccggatgta tgctccggcc aaggtaattg aagaatactt 6540
280 gaccaataaa ccagccaagc catttatctc agttgaatac gctcacgcca tgggcaactc 6600
281 cgtcggtgac ctggccgcct acacggccct ggaaaaatac ccccactacc agggcggctt 6660
282 catctgggac tggattgacc aaggactgga aaaagacggg cacctgcttt atgggggcga 6720
283 cttcgatgac cggccaaccg actatgaatt ctgcgggaac ggcctggtct ttgctgaccg 6780
284 gactgaatcg ccgaaactgg ctaatgtcaa ggcccttac gccaacctta agttagaagt 6840
285 aaaagatggg cagctcttcc tcaaaaacga caatttattt accaacagct catcttacta 6900
286 cttcttgact agtcttttgg tcgatggcaa gttgacctac cagagccggc ctctgacctt 6960
287 tggcctggag cctggcgaat ccgggacctt tgccctgcct tggccggaag tcgctgatga 7020
288 aaaaggggag gtcgtctacc gggtaacggc ccacttaaaa gaagacttgc cttgggcgga 7080
289 tgagggcttc actgtggctg aagcagaaga agtagctcaa aagctgccgg aatttaagcc 7140
290 ggaagggcgg ccagatttag ttgattccga ctacaaccta ggcctgaaag gaaataactt 7200
291 ccaaattctc ttctccaagg tcaagggctg gccggtttcc ctcaagtatg ccggtaggga 7260

RAW SEQUENCE LISTING DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 11:48:42

Input Set : A:\12875-002001.txt
Output Set: N:\CRF3\05092002\I778516A.raw

```
     292 atacttgaag cggctgccgg aatttacctt ctggcgggcc ctgacggaca acgaccgggg    7320
     293 agctggttac ggctatgatc tggcccggtg ggaaaatgcc ggcaagtatg cccgcttgaa    7380
     294 agacatcagc tgcgaggtca aggaagactc cgttttggtc aagactgcct ttacgttgcc    7440
     295 tgtcgcctta aagggtgatt taaccgtgac ctatgaagtc gatggacggg gcaagattgc    7500
     296 tgtaacagct gacttcccag gcgcggaaga agctggtctc ttgccagcct ttggcttgaa    7560
     297 cctggccctg ccaaaagaac tgaccgatta ccgctactat ggtctgggac ctaatgagag    7620
     298 ctacccagac cgcttggaag gtaattacct gggcatctac cagggagcgg taaaaaagaa    7680
     299 ctttagccca tatcgtccgc aggaaacggg caaccggagc aaggttcgct ggtaccagct    7740
     300 ctttgatgaa aagggcggct tggaatttac ggccaatggg gcagacttga acttgtctgc    7800
     301 tttgccatat tctgccgccc aaattgaagc agcggaccac gcttttgaac tgactaacaa    7860
     302 ttacacttgg gttagagcct taagcgccca gatgggggtc ggcggggatg actcctgggg    7920
     303 gcagaaggtc cacccggaat tctgcctgga tgctcaaaaa gcccgccagc ttcgcctggt    7980
     304 gattcagccc cttttactaa aataaatgct acaattgact taacaggatg aaattttagt    8040
     305 aaaagcaaag cgagtgagga agatggcaac gatcagagaa gtgccaaggc agccggcgtg    8100
E--> 306 tcgctagcga cggtc                                                  8115<210>  3
     307 <211> LENGTH: 30
     308 <212> TYPE: DNA
     309 <213> ORGANISM: Artificial Sequence
     311 <220> FEATURE:
     312 <223> OTHER INFORMATION: oligonucleotide for PCR
W--> 314 <210> SEQ ID NO:
E--> 314 <400> SEQUENCE: 3
     315 aagctcatga ttggcagcca gtctccgggc                                      30
E--> 317 <210> SEQ ID NO: 4
```

insert ↙ hard return

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 05/09/2002
PATENT APPLICATION: US/09/778,516A TIME: 11:48:43

Input Set : A:\12875-002001.txt
Output Set: N:\CRF3\05092002\I778516A.raw

Invalid Line Length:
The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:2; Line(s) 306

Skipped Sequences(NEW RULES):
Sequence(s)__missing. If intentional, please use the following format for each skipped sequence.
<210> sequence id number
<400> sequence id number
000

Seq#:3